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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,042	11/07/2001	Wei-Yu Su	TS01-132	1835

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EXAMINER

EL ARINI, ZEENAB

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/040,042

Applicant(s)

SU, WEI-YU

Examiner

Zeinab E. EL-Arini

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-8 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-8, and 10-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment and remarks filed 04/25/05 have been acknowledged and entered.

The rejections under 35 U.S.C. 103(a) over Kern or Hanson et al, and Kern or Hanson in combination with Lee et al., and under 102(b) as anticipated by Nagamura et al stated in paper No. 021405 have been withdrawn in view of applicant's amendment.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-8, and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagamura et al. (6,071,376).

Re claims 1, 4-5, 7-8, 11-12, 14-17, Nagamura et al. disclose a method and apparatus for cleaning a photomask to be used in the photolithography step in the process for the production of semiconductor integrated circuit device. The reference discloses treating the photomask by contacting with a solution comprising ammonium hydroxide, hydrogen peroxide and water, agitating the solution by using ultrasonic , and the multiple number of cleaning cycles, and the photomasks (claims 1, 7), the temperature (claims 4, 11), The pH (claims 5, 12), and the limitation of claims 8, 14-17. See col. 1, lines 13-

20, lines 28-33, 49-55, col. 2, lines 22-33, 40-62, col. 4, lines 17-48, col. 8, lines 28-35, col. 9, lines 1-51, Figs. 5-6, and the document in general. Removing particles and residues greater than about 0.2 microns is inherent in Nagamura et al. process.

Re claims 1, 7, Nagamura et al. as discussed supra do not teach the ratio and the number of cleaning cycles as claimed.

It would have been obvious for one skilled in the art to adjust the ratio and number of cleaning cycles to obtain optimum results. The number of cleaning cycles depends on the amount of the particles and the residues on the photomasks.

3. Claims 1, 3-7, and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson et al.

Hanson et al. teach a process and apparatus for semiconductor device fabrication. Hanson et al. teach cleaning the substrate by using solution comprising NH_4OH , H_2O_2 , H_2O , and having pH of about 9 to about 11. Hanson et al. also teach that the amount of time the substrate is cleaned is largely matter of design choice. The reference also teaches agitating the cleaning solution and the temperature range as claimed. See col. 1, line 10-col. 4, line 23. The reference also teaches cleaning the photomasks as claimed, see col. 1, lines 46-54. The reference does not teach the multiple numbers of cleaning

cycles, the ratio, and the limitations of claims 3 and 10 as claimed.

It would have been obvious for one skilled in the art to adjust the ratio, and using multiple numbers of cleaning cycles to obtain optimum results. The limitations of claims 3 and 10 are inherent in the Hanson et al. reference.

Response to Arguments

4. Applicant's arguments with respect to claims 1, 3-8, and 10-17 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to

Application/Control Number:
10/040,042
Art Unit: 1746

Page 7

Zeinab E. EL-Arini whose telephone number is (571) 272-1301. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Application/Control Number:
10/040,042
Art Unit: 1746

Page 8

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Zeinab E. EL-Arini
Zeinab E. EL-Arini
Primary Examiner
Art Unit 1746

ZEE
07/07/05